

IN THE CLAIMS

1. (Currently Amended) An apparatus for conditioning gas prior to the use of the gas in a medical procedure involving a patient, the gas being received into the apparatus from an insufflator which receives gas from a gas source, and the gas exiting the apparatus being in flow communication with a means for delivering the gas to the interior of the patient, wherein the gas is pressure-and volumetric flow rate-controlled by the insufflator, the apparatus comprising:

- a) a housing defining a chamber having an entry port and an exit port, the exit port adapted to be in flow communication with the means for delivering and the entry port adapted to be in flow communication with the insufflator; and
- b) humidification means disposed within the chamber in the path of travel of the gas through the chamber for humidifying the gas as it travels through the chamber; and
- c) a heating element disposed within the chamber for heating gas as it passes through the chamber; and
- d) humidity sensing means disposed within the chamber for sensing the humidity of gas as it exits the chamber; and
- e) monitoring means connected to the humidity sensing means for monitoring the humidity of the gas as it exits the chamber and indicating when the humidity of the gas exiting the chamber drops below a predetermined threshold by generation of [a] an audio or visual recharge signal indicative thereof to prevent the chamber from going dry.

2. (Previously Presented) The apparatus of claim 1, further comprising a backup container for liquid and an access tube that couples the backup container to the housing to provide a supply of liquid to the humidification means.

3. (Previously Presented) The apparatus of claim 2, wherein the humidification means comprises at least one layer of liquid-retaining material capable of retaining a volume of liquid.

4. (Previously Presented) The apparatus of claim 3, wherein the at least one layer of liquid-retaining material is pre-charged with the volume of liquid.

5. (Previously Amended) The apparatus of claim 3, wherein the at least one layer of liquid retaining material is rechargeable with liquid.

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72. (Previously Presented) The apparatus of claim 1, wherein the backup container hangs free of the housing.

73. (Previously Presented) The apparatus of claim 1, wherein the backup container is fastened to the apparatus.

74. (Previously Presented) The apparatus of claim 1, wherein the backup container is fastened to a tube segment leading from the insufflator to the entry port of the housing.

75. (Previously Presented) The apparatus of claim 1, and further comprising an extension tube that couples the access tube to the humidification means.

76. (Previously Presented) The apparatus of claim 1, wherein the humidity sensing means is positioned in the chamber in the flow path of the gas proximate the exit port of the housing.

77. (Previously Presented) The apparatus of claim 1, wherein the humidity sensing means is a humidity sensitive capacitor or a humidity sensitive resistor.

78. (Previously Presented) The apparatus of claim 1, wherein the monitoring means is responsive to a signal representing a capacitance or resistance of the humidity sensing means.

79. (Previously Presented) The apparatus of claim 1, wherein the monitoring means determines when the relative humidity of gas in the chamber drops below a relative humidity threshold and generates a signal in response thereto.

80. (Previously Presented) The apparatus of claim 1, wherein the monitoring circuit determines that the container in the humidification means requires recharging of liquid when the humidity of the gas in the chamber drops below a relative humidity threshold.

81. (Previously Presented) An apparatus for conditioning gas prior to the use of the gas in a medical procedure involving a patient, the gas being received into the apparatus from an insufflator which receives gas from a gas source, and the gas exiting the apparatus being in flow communication with a means for delivering the gas to the interior of the patient, wherein the gas is pressure-and volumetric flow rate-controlled by the insufflator, the apparatus comprising:

- a) a housing defining a chamber having an entry port and an exit port, the exit port adapted to be in flow communication with the means for delivering and the entry port adapted to be in flow communication with the outlet of the insufflator; and
- b) humidification means disposed within the chamber in the path of travel of the gas through the chamber for humidifying the gas as it travels through the chamber; and
- c) a heating element disposed within the chamber for heating gas as it passes through the chamber; and
- d) a temperature sensor disposed in the chamber to sense the temperature of the gas as it exits the chamber; and

e) a control circuit connected to the temperature sensor and to the heating element, and responsive to the temperature sensor to control electrical power to the heating element so as to regulate the amount of heat applied by the heating element to the gas within the chamber, thereby maintaining the gas at a desired temperature or within a desired temperature range; and

f) a backup container for liquid and an access tube that couples the backup container to the housing to provide a supply of liquid to the humidification means
wherein the means for delivering gas to a patient is a trocar.